



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Structure and phase transitions in several metal-organic framework glass formers

An invited talk

Yue, Yuanzheng

Publication date:
2019

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Yue, Y. (2019). *Structure and phase transitions in several metal-organic framework glass formers: An invited talk*. Abstract from International Symposium on Metastable Materials Science & Technology, Qinhuangdao, China.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Structure and phase transitions in several metal-organic framework glass formers

Yuanzheng Yue

*Department of Chemistry and Bioscience, Aalborg University, 9220 Aalborg, Denmark
State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology,
Wuhan 430070, China.*

Metal-organic frameworks (MOFs) are microporous inorganic-organic hybrid materials constructed by metallic nodes and their organic ligands. In 2015, some of MOFs were found to be excellent glass formers. The melt-quenched MOF glasses are an emerging family of glasses, in which the coordination bonds constitute the structural skeleton. In the present talk, I first review recent advances in investigating the structure, phase transitions, and glass formation in some of Zeolitic Imidazolate Frameworks (ZIFs) (a subset of MOFs) during dynamic heating, isothermal treatment and quenching. I then describe possible mechanism for glass formation of some ZIFs, and the origin of the ultrahigh glass forming ability of those ZIFs. I finally report on recent progress in discovering possible functionalities of the melt-quenched ZIF glasses. In addition, I point out some major challenges and perspectives concerning future research of MOF glasses.